



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Atty. Docket: FINKELSTEIN=1

In re Application of:)	Conf. No.: 6641
Alexander FINKELSTEIN et al.)	Art Unit: 2891
Appln. No.: 10/585,582)	Examiner: M. L. REAMES
Filing Date: July 10, 2006)	Washington D.C.
For: DEVICE AND METHOD FOR)	November 20, 2006
MANIPULATING DIRECTION OF)	
MOTION OF CURRENT CARRIERS))	

INFORMATION DISCLOSURE STATEMENT [IDS]

Honorable Commissioner for Patents
U.S. Patent and Trademark Office
Customer Service Window
Randolph Building, Mail Stop Amendment
401 Dulany Street
Alexandria, VA 22314

Sir:

This Information Disclosure Statement is submitted in accordance with 37 CFR §§1.97, 1.98, and it is requested that the information set forth in this statement and in the listed documents be considered during the pendency of the above-identified application, and any other application relying on the filing date of the above-identified application or cross-referencing it as a related application.

1. This IDS should be considered, in accordance with 37 CFR §1.97, as it is filed before the mailing date of a first office action on the merits or before the mailing of a first Office action after the filing of a Request for Continued Examination under 37 CFR §1.114.

2. In accordance with 37 CFR §1.98, this IDS includes a list (e.g., form BN/SB/08A/B) of all patents, publications, or other information submitted for consideration by the office, either incorporated into this IDS or as an attachment hereto.

Other than U.S. patent(s) and/or published U.S. application(s), which 37 CFR §1.98(a)(2)(ii) does not require to be filed unless specifically required by the Office, a copy of each document listed is attached.

3. No explanation of relevance is necessary for documents in the English language (see reply to Comments 67 and 68 in the preamble to the final rules; 1135 OG 13 at 20).

4. Other information being provided for the examiner's consideration follows:

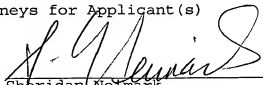
International Search Report mailed September 22, 2006.

5. In accordance with 37 CFR §§1.97(g) and (h), the filing of this IDS should not be construed as a representation that a search has been made or that information cited is, or is considered to be, material to patentability as defined in 37 CFR §1.56(b), or that any cited document listed or attached is (or constitutes) prior art. Unless otherwise indicated, the date of publication indicated for an item is taken from the face of the item and Applicant reserves the right to prove that the date of publication is in fact different.

Respectfully submitted,

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Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 3

Complete if Known

Application Number	10/585,582
Filing Date	July 10, 2006
First Named Inventor	Alexander FINKELSTEIN
Group Art Unit	2891 Confirmation No. 6641
Examiner Name	Matthew L. REAMES
Attorney Docket Number	FINKELSTEIN=1

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
	AA	US-6,355,953 B1	03-12-2002	George KIRCZENOW	
	AB	US-203/0075772 A1	04-24-2003	Alexander EFROS et al	
	US-				
	US-				
	US-				

NON PATENT LITERATURE DOCUMENTS /OTHER INFORMATION

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	
	AC	S. A. WOLF et al., "Spintronics: A Spin-Based Electronics Vision for the Future", <u>SCIENCE</u> , Vol. 294, pp. 1488 - 1495, November 16, 2001	
	AD	H. OHNO et al., "Semiconductor Spin Electronics", <u>JSPAP International</u> , Mo. 5, pp. 4-13, January 2002.	
	AE	Gary PRINZ, "Magnetoelectronics", <u>SCIENCE</u> , Vol. 282, pp. 1660-1663, November 27, 1998.	
	AF	Mark JOHNSON et al., "Interfacial Charge-Spin Coupling: Injection and Detection of Spin Magnetization in Metals", Vol. 55, No. 17, pp. 1790-1793, October 21, 1995.	
	AG	R. FIEDLERLING et al., "Injection and Detection of a spin-polarized current in a light-emitting diode", <u>NATURE</u> , Vol. 402, pp. 787-789, December 16, 1999.	
	AH	Y. OHNO et al., "Electrical spin injection in a ferromagnetic semiconductor heterostructure", <u>NATURE</u> , Vol. 402, pp. 790-792, December 16, 1999.	
	AI	Vladimir Ya. KRAVCHENKO et al., "Spin injection into a ballistic semiconductor microstructure", <u>Physical Review B</u> , Vol. 67, pp. 121310-1 - 121310-4, 2003.	
	AJ	G. F. DRESSSELHAUS, "Spin-Orbit Coupling Effects in Zinc Blende Structures", <u>Physical Review</u> , Vol. 100, No. 2, pp. 580-586, October 15, 1955.	
	AK	E. I. RASHBA, "Properties of Semiconductors with an Extremum Loop I. Cyclotron and Combinatorial Resonance in a Magnetic Field Perpendicular to the Plane of the Loop", <u>Soviet Physics - Solid State</u> , Vol. 2, pp. 1109-1122, June 1960.	
Examiner Signature	/Matthew Reames/		Date Considered 09/28/2009

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kind Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

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Sheet 2 of 3

Complete if Known

Application Number	10/585,582	
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First Named Inventor	Alexander FINKELSTEIN	
Group Art Unit	2891	Confirmation No. 6641
Examiner Name	Matthew L. REAMES	
Attorney Docket Number	FINKELSTEIN=1	

NON PATENT LITERATURE DOCUMENTS /OTHER INFORMATION

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
	AL	Yu A. BYCHKOV et al., "Oscillatory effects and the magnetic susceptibility of carriers in inversion layers", <u>J. Phys. C, Solid State Phys.</u> , Vol. 17, pp. 6039-6045, 1984.	
	AM	J. LUO et al., "Effects of inversion asymmetry on electron energy band structures in GaSb/InAs/GaSb quantum wells", <u>Phys. Review B</u> , Vol. 41, No. 11, pp. 7685-7693, April 15, 1990.	
	AN	Simon M. SZE, "Semiconductor Devices: Physics and Technology", <u>Wiley Text Books</u> , 2 nd Edition, pp. 246-253 and 332-368, September 2001.	
	AO	Y. SATO et al., "Large spontaneous spin splitting in gate-controlled two-dimensional electron gases at normal $\text{In}_{0.75}\text{Ga}_{0.25}\text{As}/\text{In}_{0.75}\text{Al}_{0.25}\text{As}$ heterojunctions", <u>Journal of Applied Physics</u> , Vol. 89, No. 12 pp. 8017-8021, June 15, 2001.	
	AP	P. M. MORSE et al., "Methods of Theoretical Physics I", Chapter 12.2 Distribution Functions for Diffusion Problems, pp. 1606-1638, June 1953.	
	AQ	Igor ZUTIC et al., "Spintronics: Fundamentals and applications", <u>Review of Modern Physics</u> , Vol. 76, pp. 323-410, April 2004.	
	AR	A. A. KISELEV et al., "T-shaped spin filter with a ring resonator", <u>Journal of Applied Physics</u> , Vol. 94, No. 6, pp. 4001-4005, September 15, 2003.	
	AS	A. A. KISELEV et al., "T-shaped ballistic spin filter", <u>Applied Physics Letters</u> , Vol. 78, No. 6, pp. 775-777, February 5, 2001.	
	AT	Sanker Das. SARMA, "Spintronics", <u>American Scientist</u> , Vol. 89, pp. 516, November 2001.	
	AU	I. I. RABI, "Space Quantization in a Gyating Magnetic Field", <u>Physical Review</u> , Vol. 51, pp. 652-654, April 15, 1937.	
	AV	J. SPECTOR et al., "Control of ballistic electrons in macroscopic two-dimensional electron systems", <u>Appl. Phys. Letters</u> , Vol. 56, No. 10, pp. 967-969, March 5, 1990.	

Examiner
SignatureDate
Considered

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449/APTO		Complete If Known	
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<i>(use as many sheets as necessary)</i>		Filing Date	July 10, 2006
		First Named Inventor	Alexander FINKELSTEIN
		Group Art Unit	2891 Confirmation No. 6641
		Examiner Name	Matthew L. REAMES
		Attorney Docket Number	FINKELSTEIN=1

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.R./